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Review of the implementation of the Mauritius Strategy

Report of the Secretary-General

Summary

The General Assembly, in its resolution 62/191, decided to review the progress made in addressing the vulnerabilities of small island developing States through the implementation of the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of small island developing States at the sixty-fifth session of the Assembly. Preparations for the five-year review process have begun and had resulted in a series of national and regional review reports as of March 2010.

The objective of the present report is to provide an initial global synthesis of the national and regional five-year review of the Mauritius Strategy, in order to inform the deliberations of Member States on small island developing States day during the eighteenth session of the Commission for Sustainable Development. On the basis of the recommendations made by Member States, a fine-tuned report will be submitted to the General Assembly in September 2010 for the consideration of Member States at the sixty-fifth session of the Assembly.

* E/CN.17/2010/1.

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Contents

		Page
I.	Introduction	3
II.	Overall development progress of small island developing States	4
	A. Macroeconomic developments	4
	B. Progress towards the Millennium Development Goals	5
	C. Special vulnerabilities of small island developing States to shocks	6
	D. Implementation of the Mauritius Strategy	11
III.	Implementation of the Mauritius Strategy: progress, lessons learned and continuing challenges	13
	A. Economy	13
	B. Environment	25
	C. Social systems and institutions	33
IV.	Issues for consideration	38

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I. Introduction

1. The Barbados Programme of Action, adopted in 1994, highlighted the special challenges and constraints that have resulted in major setbacks for the socio-economic development of small island developing States. It translated Agenda 21 into specific actions and measures to enable those States to achieve sustainable development. In 2005, the implementation of the Programme of Action was reviewed and the Mauritius Strategy for the Further Implementation of the Barbados Programme of Action for Sustainable Development of Small Island Developing States was adopted. The Strategy sets forth actions and strategies in 19 priority areas, including the original themes of the Programme of Action. A high-level meeting will be convened in 2010 during the sixty-fifth session of the General Assembly, to carry out a five-year review of the progress made in addressing the vulnerabilities of small island developing States through the implementation of the Strategy, in accordance with General Assembly resolutions. In 2008 the General Assembly, in its resolution 62/191, decided to review the progress made in addressing the vulnerabilities of small island developing States through the implementation of the Mauritius Strategy for the Further Implementation of the Programme of Action for the Sustainable Development of small island developing States at the sixty-fifth session of the Assembly. General Assembly resolutions 63/213 and 64/199 further clarified the expectations of Member States and the processes involved in the five-year review.

2. In response, the Department of Economic and Social Affairs, through its Small Island Developing States Unit, the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, the regional commissions and other United Nations entities have provided support for preparations for the Mauritius Strategy review process. A series of national assessment reports have been prepared, which will form the substantive basis of the review.[1] Regional review meetings were held in Vanuatu, on 8 and 9 February 2010; the Maldives, on 9 and 10 March; and in Grenada, on 16 and 18 March, which resulted in regional outcome statements and in-depth regional synthesis reports. An interregional meeting of small island developing States will be held in May 2010, followed by Small Island Developing States day, to be convened during the eighteenth session of the Commission on Sustainable Development, which will serve as the Preparatory Committee for the high-level five-year review of the implementation of the Mauritius Strategy, to be held in September 2010, during the sixty-fifth session of the General Assembly.

3. The objective of the present report is to provide an initial global synthesis of the national and regional Strategy review reports, in order to inform the deliberations of Member States on Small Island Developing States day. On the basis of the comments made and the priorities expressed by Member States, a fine-tuned report will be submitted for the consideration of Member States at the five-year review.

[1] http://www.sidsnet.org/msr/5/index.shtml.

4. The small island developing States share many of the characteristics of other developing countries, but they face unique and special challenges.[2] Unless otherwise noted, the data used in this report are derived from official statistics compiled in UN-Data.[3]

5. Section II of the present report summarizes the overall development progress of small island developing States with respect to macroeconomic developments, progress towards the Millennium Development Goals, vulnerability trends and overall experience with the implementation of the Mauritius Strategy. Section III provides a more in-depth account of the progress made, the lessons learned and the continuing challenges in terms of Strategy implementation, for each Strategy theme and means of implementation. Section IV sets out conclusions, as well as suggestions concerning issues for consideration by Member States.

II. Overall development progress of small island developing States

6. Substantial progress has been made in the small island developing States. Reports on the achievement of the Millennium Development Goals as of late 2009 indicated progress but also called for renewed efforts. However, those States continue to be highly vulnerable to external shocks, as evidenced by the impact of the series of global crises that have occurred since 2007.

A. Macroeconomic developments

7. The economic growth of small island developing States has declined from an average of 3.7 per cent per year in the 1970s to 2.2 per cent in the 2000s, in contrast to the strong (and typically accelerating) economic growth in many developing countries. The development progress achieved was due largely to the efforts of the States themselves, supported by their regional organizations, the United Nations system, donors and non-governmental organizations. Despite the relatively advanced position of small island developing States in terms of gross domestic

[2] The term small island developing States refers to the 38 United Nations Member States listed on the website of the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States (http://www.un.org/special-rep/ohrlls/sid/list.htm): Antigua and Barbuda, the Bahamas, Bahrain, Barbados, Belize, Cape Verde, the Comoros, Cuba, Dominica, the Dominican Republic, Fiji, Grenada, Guinea-Bissau, Guyana, Haiti, Jamaica, Kiribati, Maldives, the Marshall Islands, Mauritius, Micronesia (Federated States of), Nauru, Palau, Papua New Guinea, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Seychelles, Singapore, Solomon Islands, Suriname, Timor-Leste, Tonga, Trinidad and Tobago, Tuvalu and Vanuatu. In addition, the website lists 14 non-United Nations members that are associate members of the United Nations regional commissions. In case of data availability problems, aggregates are often reported for a subgroup comprising 29 small island developing States for which more comprehensive data exists: Antigua and Barbuda, the Bahamas, Barbados, Cape Verde, the Comoros, Dominica, Fiji, Grenada, Jamaica, Kiribati, Maldives, the Marshall Islands, Mauritius, Micronesia (Federated States of), Nauru, Palau, Papua New Guinea, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Seychelles, Solomon Islands, Timor-Leste, Tonga, Trinidad and Tobago, Tuvalu and Vanuatu.

[3] data.un.org.

product (GDP) per capita and in terms of the human development index, those States have some of the world's highest income-distribution inequalities.

9. Small island developing States share very high levels of intrinsic vulnerabilities despite, on average, higher incomes than least developed countries and landlocked developing countries. External shocks account for an important part of the marked differences in growth dynamics among small island developing States. In the 2000s, only 8 per cent of small island developing States achieved average annual economic growth of at least 6 per cent, and 36 per cent of those States experienced less than 2 per cent growth, or even negative economic growth, in the 2000s. In fact, the goal of sustained high levels of economic growth over the course of several decades has been an elusive one for most of those States. Yet such growth is often considered necessary for sustained poverty reduction.

9. The economies of the Pacific small island developing States grew at an estimated 5 per cent in 2008, slowing to 3 per cent in 2009. However, such average growth rates are misleading owing to the relatively high growth achieved by a few resource-exporting small island developing States. Most of the smaller Pacific States have seen economic growth averaging from 0 to 3 per cent, even in the booming years before the global financial crisis, which has meant continued reliance on aid. Caribbean small island developing States have been hit hard by the global financial crisis. There GDP contracted by more than 2 per cent in 2009 despite the expansionist strategies employed, which will increase their debt levels, which were already high even before the crisis. For example, the debt service ratio (in per cent of revenues) of Dominica was already 83 per cent in 2007. In addition, external account deficits are large — between 24 and 36 per cent — in Antigua and Barbuda, Dominica, Saint Kitts and Nevis, Saint Lucia and Saint Vincent and the Grenadines.

II. Progress towards the Millennium Development Goals

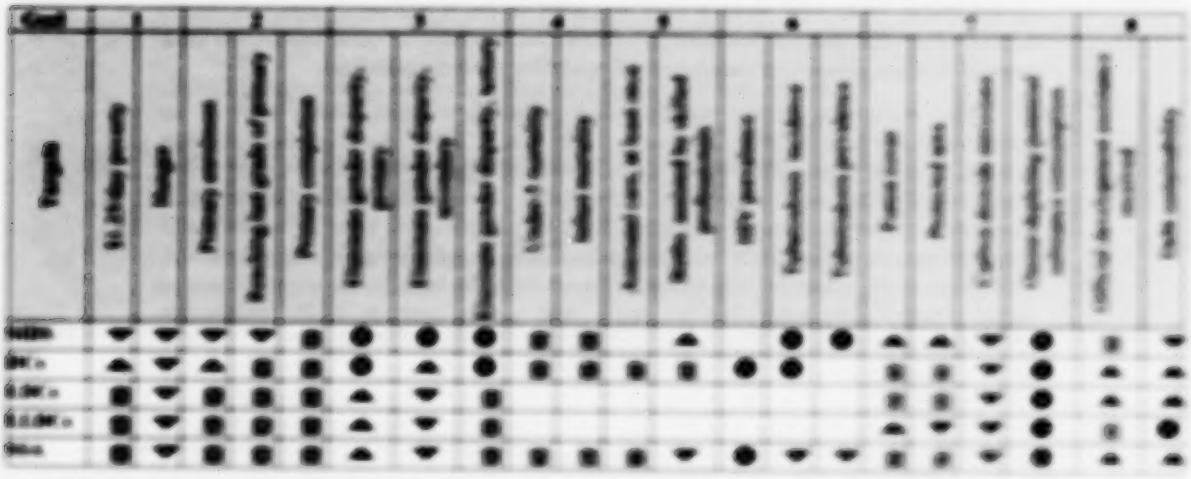
10. The *Millennium Development Goals Report 2009* indicated that the small island developing States had made some progress by 2009, but also warned that there was no room for complacency. Renewed efforts and increased support for the laggards were needed, with the goal of addressing the growing socio-economic disparities.

11. Table 1 provides a quick overview of the overall progress made in recent years by the group of small island developing States compared to other country groupings in terms of achieving the Millennium Development Goals. These States have made good progress in the areas of gender, health and certain educational and environmental goals. However, they have made less progress than most other groupings, or even regressed, in terms of economic growth, poverty reduction and debt sustainability. There is a striking difference between that group and the landlocked developing countries, the least developed countries and the countries in sub-Saharan Africa, which have on average made greater progress in terms of poverty reduction, official development assistance received and debt reduction. That outcome may be due partially to the fact that, while preferential treatment of least developed countries and special programmes for Africa have been beneficial, no similar formal recognition exists for small island developing States. These results mask large differences between and within countries. A review by the Economic and Social Commission for Asia and the Pacific (ESCAP) of the Millennium

Development Goal progress of Pacific small island developing States confirms the results shown in table 1 but indicates large differences between countries.[4] A comprehensive global assessment of the progress of small island developing States towards the achievement of the Millennium Development Goals is constrained by data quality.

Table 1

Progress made in the achievement of the Millennium Development Goals by various country groups, as of September 2009



C. Special vulnerabilities of small island developing States to shocks

12. There are concerns that the recent development progress made by small island developing States might be jeopardized by the major ongoing shocks. By virtually any measure, those States are among the world's "hot spots" in terms of sustainable development. Their vulnerability has been increased by the adverse impacts of climate change in all its manifestations and was demonstrated by the impacts of the global financial crisis of 2007-2010, the 2007-2008 food and fuel crises and the natural disasters that have occurred in 2009-2010. For example, the food crisis has had a serious impact on the poor in the small island developing States, most of which are net food importers.

[4] ESCAP, ADB, United Nations Development Programme (2010), *Achieving the Millennium Development Goals in an Era of Global Uncertainty*, Asia-Pacific Regional Report 2009/10.

13. Table 2 shows how the high levels of vulnerability of the natural, economic and social systems of the small island developing States arise from the following intrinsic characteristics:

(a) *Small size*. Small population size is an intrinsic limit. Higher income levels can increase overall economic size to only a limited extent, leaving few opportunities to create economies of scale. Small size typically leads to disproportionately expensive public administration and infrastructure. A small population typically has a narrow skills base, exacerbated by high rates of outmigration.

(b) *Remoteness*. Many small island developing States are geographically remote from major markets. And, regardless of geographic remoteness, low transport and communications volumes typically mean high freight and communications costs.

(c) *Vulnerability to external shocks and rapid scale shocks*. On average, small island developing States are relatively more exposed to natural disasters than most other developing countries. Due to the small size of their economies, they are highly dependent on trade but lack the factors that would provide benefits in terms of competitiveness. Similarly, international macroeconomic shocks tend to have higher relative impacts on their small economies. The combination of small size and remoteness leads to high production and trade costs, high levels of economic specialization and exposure to commodity price volatility.

(d) *Narrow resource base*. Small island developing States can rely on few natural resources to fuel their sustainable development. Energy, water, mineral and agricultural resources are relatively limited, and resource extraction tends to quickly reach the carrying capacities of the small islands.

(e) *Exposure to global environmental challenges*. Small island developing States face unique threats related to global environmental issues, including climate change (sea-level rise, destruction of coral reefs critical to food security), marine, biodiversity loss, waste pollution and acidification of the oceans. It should also be noted that the vulnerability of small island developing States follows the logic of critical levels and tipping points.

Table 2

[illegible]

[illegible]	[illegible]
Small size	Small population
	Overall economic size
	Few opportunities to create economies of scale
	Disproportionately expensive public administration and infrastructure

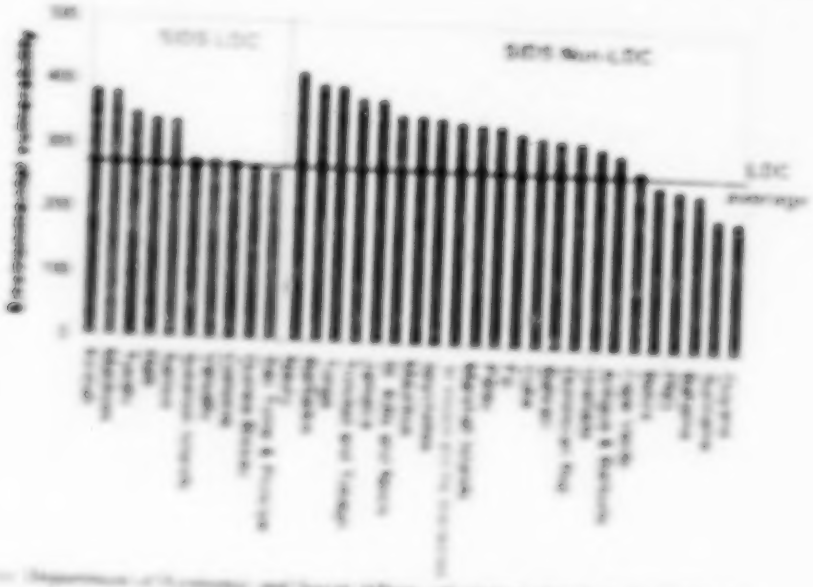
[illegible]

[illegible]	[illegible]
Remoteness	High transport and communications costs
Vulnerability to external shocks (demand and supply-side)	Exposure to natural disasters
	Trade dependence
	Macroeconomic shocks
	Exposure of social systems to shocks
Narrow resource base	Limited natural ecosystem to fuel development (energy, water, minerals, agriculture)
	Low carrying capacity of ecosystems (e.g., waste landfills)
Exposure to global environmental challenges	Climate change
	Biodiversity
	Ocean (waste, acidification)

(a) Since the early 1990s, many efforts to quantify vulnerability have focused on economic and environmental vulnerabilities rather than social ones, in line with the efforts made within the United Nations system to devise an economic vulnerability index to be used as a criterion for the identification of least developed countries. The Committee for Development Policy developed a composite economic vulnerability index to measure the structural economic vulnerability of a country. [illegible] takes into account export concentration, instability of export earnings, instability of agricultural production, the share of manufacturing and modern services in GDP and population size (a term the South Pacific Applied Geoscience Commission (SOPAC) developed the Environmental Vulnerability Index, which is based on 50 indicators covering natural/anthropogenic risks, resilience and ecosystem integrity and covers issues related to climate change, biodiversity, water, agriculture and fisheries, human health, desertification, and exposure to natural disasters. The index for most small island developing States is considerably higher than for least developed countries (see fig. 1) and has increased over time.

Figure 1

Environmental vulnerability index for 33 small island developing States compared with the average for all least developed countries



[illegible]

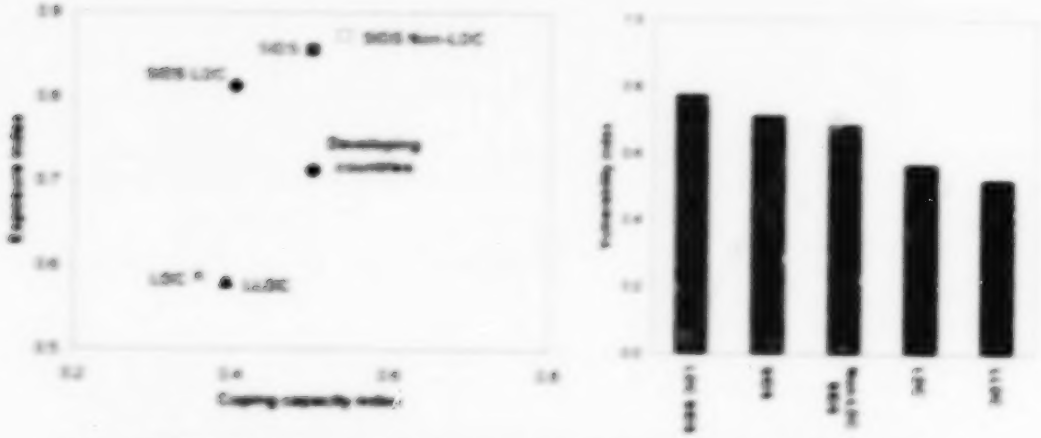
(1) Low as 2004 EVI, VI, VIEI and LVIEI derived as economic vulnerability index in order to assess the vulnerability of countries to financial and economic crises.[1] The so-called EVI VI economic crisis vulnerability index is defined as the normalized difference between an exposure index and a coping capacity index.[2] The EVI VI index was calculated for 110 countries, including 24 small island developing States worldwide, of which 9 are least developed countries (see fig. III). Figure I shows that small island developing States have, on average, significantly higher economic vulnerability than other developing countries, which is due primarily to their higher exposure to shocks. The vulnerability of higher-income small island developing States that are not least developed countries is on average higher than that of the group of all least developed countries, which indicates that their income efficiently compensate for their high economic exposure with higher coping capacities, despite their higher incomes. Landlocked developing countries, which

[1] Five indicators are used to measure the exposure to the economic crisis: (a) EVI/VI index of export vulnerability per GDP per capita; (b) foreign direct investment as a percentage of GDP; (c) official development assistance as a percentage of GDP; (d) workers' remittances as a percentage of GDP; and (e) personal services as a percentage of GDP. The capacity to mitigate the crisis is assessed using five different indicators: (a) external public debt stocks as GDP ratio; (b) total reserves in months of imports; (c) gross savings as GDP ratio; (d) government effectiveness World Bank Worldwide Governance Indicators; and (e) Human Development Index.

typically have low coping capacities, nevertheless exhibit considerably lower vulnerabilities than small island developing States. The average economic vulnerability of small island developing States increased from 0.61 in 2000 to 0.71 in 2007, primarily because of a higher exposure (0.78 to 0.86), combined with a slightly lower coping capacity (0.53 to 0.50). In contrast, the average vulnerability of small island developing States had decreased slightly, from 0.65 in 1995 to 0.61 in 2000, primarily because of a higher coping capacity despite increased exposure.

Figure II

Economic crisis vulnerability by region and country groups



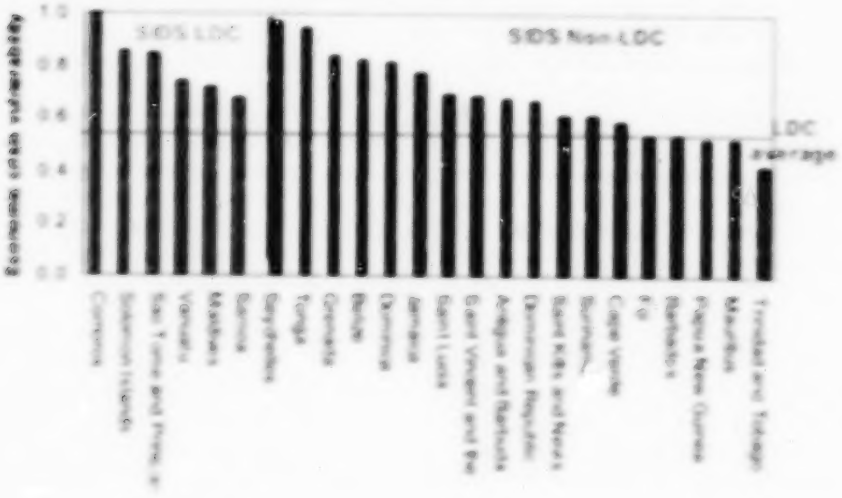
Source: ESCAP and the Department of Economic and Social Affairs, based on ESCAP research and the methodologies contained in the ESCAP-UNDP *Asia-Pacific Regional Report 2009/10*.

Abbreviations: LDC, least developed countries; LLDC, landlocked developing countries; SIDS, small island developing States.

34. Country differences in terms of economic vulnerability are considerable. Figure III identifies those small island developing States with the highest vulnerabilities, which is due primarily to high exposure to economic shocks. For example, Tonga is highly exposed, since it depends heavily on flows of external capital: its remittances are 39 per cent of GDP, its official development assistance is 12 per cent of GDP, and its foreign direct investment is 11 per cent of GDP. Vanuatu is in a similar position, although it relies less on tourism, which accounts for 15 per cent of GDP. Samoa is also quite exposed, since remittances account for 23 per cent of GDP and tourism for 18 per cent. Maldives is also very exposed through the tourism channel, which is 52 per cent of GDP. A few small island developing States with a relatively higher GDP per capita show higher vulnerabilities than some of the least developed countries, on average — even higher than some least developed countries that are also small island developing States. That fact raises questions about the vulnerability assessment that is undertaken in the context of considering graduation from least developed country status, and it provides support for the repeated calls by small island developing States for the formal recognition of a special category for those States.

Figure III

ESCAP economic crisis vulnerability index for 24 small island developing States compared with the average for all least developed countries (SIDS and non-SIDS)



Source: ESCAP and the Department of Economic and Social Affairs, based on ESCAP research and methodologies contained in the ESCAP/ADB/UNDP (2009) *Asia-Pacific Regional Report 2009/10*.

Abbreviations: LDC, least developed countries; SIDS, small island developing States.

17. The very high level of vulnerability of small island developing States would be even more evident in the context of a comprehensive approach that takes into account economic, environmental and social vulnerabilities. A comprehensive vulnerability-resilience framework aimed at developing country profiles by including the economic, environmental and social dimensions of sustainable development as well as an assessment of the coping capacity and the resilience of small island developing States is currently being developed by the Department of Economic and Social Affairs. The vulnerability-resilience methodology will allow for a self-assessment by those States that could be peer-reviewed by Member States. It is expected that the preliminary results of the application of such a framework would be available in time for the high-level review.

D. Implementation of the Mauritius Strategy

18. The Strategy addresses vulnerabilities in the context of 19 themes and seven means of implementation (see table 3). Major constraints in the implementation of the Strategy have included declining levels of official development assistance in some small island developing States, lack of technical expertise, and financial, technical and institutional challenges in terms of monitoring and evaluation. In

assessing the progress made in the implementation of the Strategy, it should be noted that measures to reduce exposure or to increase coping capacities are naturally limited in small island developing States because their defining characteristics are the intrinsic causes of their high levels of vulnerability.

19. A proxy for input in terms of human and financial resources for Strategy implementation by the United Nations system, regional organizations and donors is official development assistance. Overall official development assistance flows to the subgroup of 29 small island developing States[2] (herein after referred to as the small island developing States subgroup) increased to $1.7 billion in 2007, and multilateral aid for small island developing States increased to $665 million in 2007, most of which originated from the European Union. United Nations support was on the order of tens of millions of United States dollars in 2009. In terms of output, progress in the implementation of the Strategy clearly varies between regions and between countries, which is also evidenced by the different degrees of progress made in terms of Millennium Development Goals and vulnerability.

20. Issues related to the Mauritius Strategy are typically well integrated into the national development plans and strategies of small island developing States, the majority of which cover the most salient thematic areas of the Strategy. According to a survey carried out by ECLAC early in 2010, 63 per cent of Caribbean small island developing States indicated that their financial resources were insufficient for them to implement the Strategy, whereas 25 per cent stated they had sufficient resources to make good progress. A total of 38 per cent stated that they had fairly good technical expertise for implementation, whereas half had only minimum expertise available. The support for Strategy implementation obtained from the international community was rated as satisfactory by 38 per cent, whereas 57 per cent indicated that only limited support had been received. The survey results are indicative of the continued need for financial and technical assistance from development partners for Strategy implementation, which has been voiced by small island developing States across the world. There is a need to consider funding modalities and programmes that fully take into account the special situation of those States.

Table 3
Mauritius Strategy themes and means of implementation

	Themes		
1	Climate change and sea-level rise	11	Science and technology
2	Natural and environmental disasters	12	Graduation from least-developed country status
3	Management of wastes	13	Trade: globalization and trade liberalization
4	Coastal and marine resources	14	Sustainable capacity development and education for sustainable development
5	Freshwater resources	15	Sustainable production and consumption
6	Land resources	16	National and regional enabling environments
7	Energy resources	17	Health

		Themes	
8	Tourism resources	18	Knowledge management and information for decision-making
9	Biodiversity resources	19	Culture
10	Transportation and communications		
		MSI means of implementation	
1	Access to and provision of financial resources	5	Monitoring and evaluation
2	Science and development and transfer of technology	6	Role for the United Nations in the further implementation of the Programme of Action
3	Capacity development	7	Role of small island developing States regional institutions in monitoring and implementation
4	National and international governance		

III. Implementation of the Mauritius Strategy: progress, lessons learned and continuing challenges

21. The present section provides additional details on the progress made, the lessons learned and the continuing challenges in terms of implementation of the Mauritius Strategy. Strong interlinkages between Strategy themes and means of implementation, the special vulnerabilities of small island developing States and the sustainable development dimension should also be noted.

A. Economy

Transport and communications (theme 10)

22. Transport and communications are lifelines within the small island developing States and link them with one another and the outside world. This increases their vulnerability, as distance and isolation have resulted in relatively high transport costs, and the quality and frequency of international shipping and air services are largely beyond their control.

23. In an analogy to landlocked countries, small island developing States can be called "sea-locked". While maritime transport is typically much cheaper than land transport owing to the large economies of scale that can be realized with modern container and bulk ships, transport volumes for most small island developing States are too low for them to benefit fully from modern shipping technology and practices. Low transport volumes, long distances and modal discontinuities (even for short overland distances) typically add up to high freight and logistics costs. For example, in February 2010, the typical cost for shipping a standard 20-foot container from Nagoya, Japan, to Port Vila, Vanuatu, was $4,700, compared with $1,100 for shipment to Brisbane, Australia, which is approximately the same

distance away.[6] Low volumes and large distances also mean high air-transport costs and a lower frequency of flights, which are important factors in the overall competitiveness of small island developing States in a globalizing world in which logistics costs and non-tariff barriers have become more important than custom tariffs. Typically, logistics performance is significantly worse in those States than in other developing countries, as evidenced by the World Bank 2010 Logistics Performance Index. Of the 11 small island developing States for which that index is available, 9 are at the bottom of the list of the 50 worst performers in terms of logistics and 3 are among the 10 worst in the world in terms of overall performance. In part, this is a direct consequence of the low transport volumes, which exacerbate the disadvantage of geographical distance.

24. On the other hand, several small island developing States have made significant progress in terms of increased transport volumes. For example, container port traffic roughly doubled from 2001 to 2007 in those States that are strategically located along major shipping routes (e.g., in the Dominican Republic, Jamaica, Mauritius, and Trinidad and Tobago). In the Bahamas, it almost tripled during that same period. However, that success was in contrast to the stagnating container flows in small island developing States on the spokes of the emerging hubs-and-spokes system of container flows. From 2000 to 2007, air freight in terms of ton-kilometres increased in 9 of the 23 small island developing States for which data was available, while in some of the poorer ones, it decreased by more than half.

25. The hubs-and-spokes topology of the international air transport network, shipping network, and Internet backbone network has benefited some of the emerging hubs while further marginalizing the small island developing States on the spokes of the system. The problem has been exacerbated by the move towards infrastructure services liberalization and private-sector participation and has offset some of the otherwise beneficial impacts of those trends. Similarly, the viability of transport services for remote islands within many small island developing States continues to be a major challenge, especially in archipelagos. Global Internet backbone networks have a similar topology, essentially following major shipping routes. But even geographically well-located small island developing States typically have not been able to translate their position into above-average bandwidth and below-average costs. In 2009, Internet Protocol transit service pricing for capitals in small island developing States was typically one to two orders of magnitude higher than in the United States of America and European cities. Thus, despite the rapid absolute improvements in communications, small island developing States continue to lag in relative terms,[7] leading to a mismatch between infrastructure and software applications. Encouraging signs in terms of external infrastructure conditions include the fact that some operators with existing C-band satellite capacity are interested in working with Pacific small island developing States, leasing capacity to them at rates much lower than the ones currently in effect

26. The notable regional progress made includes the Forum Principles on Regional Transport Services (2004) and the establishment of the Pacific Aviation Safety Office in 2005, the adoption of the Pacific Islands Air Services Agreement, ongoing effects to create a regional airline in the Caribbean, the Pacific Regional Digital

[6] www.japan-partner.com/car-shipping-cost.php.

[7] TeleGeography Research, 2010.

Strategy, the Rural Internet Connectivity Scheme sites, the One Laptop per Child initiative, and the South Pacific Information Network.

27. There has been only limited scope for public-private partnerships and other forms of private-sector involvement owing to the small size of markets in the small island developing States. That has constrained the ambitious plans of some of those States to provide "universal service" and wide-area networks for the general public. Similarly, maintenance is significantly more expensive. Yet national telecommunications policies in many small island developing States have further opened markets to competition and include ambitious plans for the roll-out of modern technologies, including satellite and fibre optics. The rapid growth in the popularity of mobile phones has been striking, to the extent that Nauru decided to phase out fixed-line service. Island-wide radio and television coverage has been achieved in a significant number of small island developing States.

28. The safety and security of shipping, air transport and Internet communications has been high on the agenda in view of the major shipping accidents that have occurred, the increased incidence of international piracy, and the security and standards work being carried out by the International Maritime Organization, the International Civil Aviation Organization, the International Telecommunication Union and the United Nations Centre for Trade Facilitation and Electronic Business.

29. Despite all of the efforts made, the provision of reliable and efficient air, land, and maritime transport and communications services remains a challenge for many small island developing States. The sharing of resources in the areas of infrastructure, technology, institutional solutions, regulation and administration has proved to be a low-cost type of cooperation. Regionalism and regionalization in transport and communications are important instruments for effectively addressing the challenges facing the small island developing States.

Trade (theme 13)

30. Owing to their small size and narrow resource base, small island developing States are among the most trade-open economies in the world and are fairly vulnerable to trade shocks. Their share in total world trade has declined continuously since 1990. While the trend growth rate of commodities exporters was in the double digits at the height of the commodities price boom in 2007, the export growth of resource-poor small island developing States remained well below the world average. The global financial crisis had a serious impact on trade. For example, the export losses of Samoa and Solomon Islands in 2008 were estimated at 31 and 16 per cent, respectively, which was considerably higher than the export losses of China (minus 7 per cent).

31. The economies of many small island developing States are highly exposed to shocks as a result of their heavy dependence on a few markets. For example, 68 per cent of Caribbean Community exports are destined for the European Union, the United States and Canada. Those small island developing States that are part of the African, Caribbean and Pacific Group of States have seen an erosion of trade preferences with the European Union under the Cotonou Agreement. At the same time, Tuvalu and other small island developing States have struggled with the loss of customs revenues, which used to fund vital education and health services.

32. Global trade flows and trade agreements mirror the hubs-and-spokes systems of transport and communications. Small island developing States are generally on the spokes of those systems and influence only minimally the direction in which the systems evolve. The situation is exacerbated by the fact that, as a result of their limited national capacities, they cannot participate in trade negotiations. The multilateral trading system imposes binding obligations on its members, irrespective of their size or particular circumstances. While the World Trade Organization (WTO) does not have specific measures for small island developing States, it created a work programme on small economies in 2002, and in 2006 adopted recommendations on measures to assist small economies in meeting their obligations.

33. At present, 24 small island developing States are WTO members. Most recently, Cape Verde and Tonga completed their accession, in 2009 and 2005, respectively. Six small island developing States are currently WTO observers, as their accession is formally in progress, including (dates of application appear in brackets): the Bahamas (2001), the Comoros (2007), Samoa (1998), Sao Tome and Principe (2004), Seychelles (1995) and Vanuatu (1995). Comprehensive accession procedures and conditionality of membership have made accession a challenge for small island developing States. Many of them, regardless of their WTO membership, continue to pursue regulatory reform. Discussions on the potential creation of a formally recognized category for small island developing States and associated with preferential treatment in WTO continues to be on the agenda, especially in view of the loss of special assistance resulting from the imminent graduation from least developed country status of a number of small island developing States.

34. Insufficient national capacity in trade facilitation, including in terms of customs, data collection and organizational information-sharing, has limited the benefits that small island developing States derive from trade. Those States have increasingly questioned the potential benefits of trade agreements, in view of their narrow economic base, their isolation from world markets and their increasing trade deficits (for example, the trade deficit of Tuvalu was 78 per cent of GDP). Trade negotiations have focused on trade in services and labour mobility for skilled professions. Regional labour mobility arrangements such as the New Zealand Recognized Seasonal Employer policy and Australia's Pacific Seasonal Worker Pilot Scheme have provided an opportunity for Pacific islanders, which has, however, remained limited owing to constraints related to high transport costs. In 2008, European Union-African, Caribbean and Pacific States Regional Economic Partnership Agreements replaced the trade chapters of the Cotonou Agreement, to which many small island developing States are signatories. Under the Economic Partnership Agreement with the Caribbean small island developing States, the European Union committed to immediate duty- and quota-free access for 98.5 per cent of the goods trade and 94 of its services sector, in return for long-term market liberalization commitments by the Caribbean Forum of African, Caribbean and Pacific States. Seven Pacific islands (Cook Islands, Fiji, Niue, Samoa, Solomon Islands, Tuvalu and Vanuatu) have announced their readiness for the Pacific Island Countries Trade Agreement, and progress has also been registered in terms of the Pacific Agreement on Closer Economic Relations.

35. Broader approaches to regional trade and economic cooperation may contribute to building the economic resilience of small island developing States. Those elaborating trade, investment, transport and development policies may wish

to consider taking a strategic perspective aimed at securing participation in the service niches of international production networks. Revolving funds could alleviate transport cost constraints on the participation of small island developing States in emerging labour mobility arrangements. Aid for trade relationships and strengthened bilateral and multilateral development assistance remains crucial, even for the higher-income small island developing States.

Access to and provision of financial resources (means I)

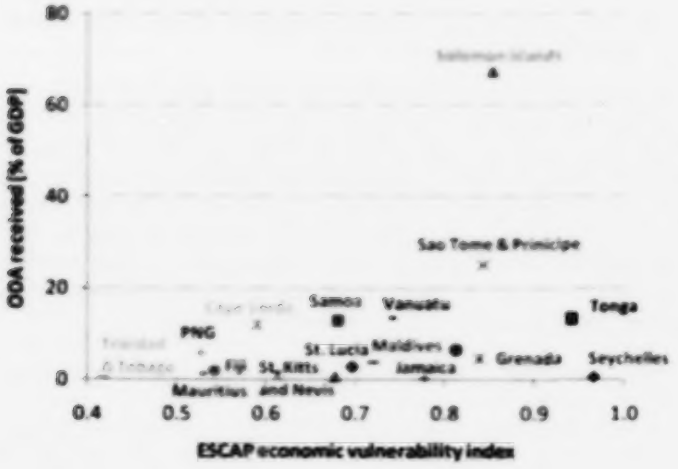
36. Financial resources are among the most important tools for small island developing States in terms of managing their vulnerability. Unfortunately, access to financial resources is a special challenge for such States because of the small size of their economies, which means that market information and project preparation costs are high. For that reason, efforts by Governments to promote foreign direct investment and public-private partnerships have met with limited success in many small island developing States. Furthermore, owing to the limitations on economies of scale, high transport costs and low trade capacities, small island developing States, despite having fairly open economies, typically have large trade deficits, which are unsustainable unless financed through external capital flows, including official development assistance, foreign direct investment and workers' remittances.

37. Average official development assistance flows received by the small island developing States subgroup declined in the late 1990s and have since settled at between 10 and 12 per cent of GDP (see figure IV). Net inflows of foreign direct investment to the sub-group were stable, at about 12 per cent of GDP, until 2005, after which that figure quickly doubled. Workers' remittances have increased rather slowly, reaching an average of 7 per cent of GDP in 2008. There is indicative evidence that remittances and foreign direct investment flows have declined drastically since the second half of 2008.

38. Overall official development assistance flows to the 29 members of the small island developing States subgroup decreased from $1.4 billion in 1995 to $1.1 billion in 2000, rose again to $1.4 billion in 2006 and reached a peak of $1.7 billion in 2007. According to the Organization for Economic Cooperation and Development/Development Assistance Committee, multilateral aid for small island developing States increased from $124 million in 2002 to $665 million in 2007, most of which originated from the European Union. Multilateral aid flows differed greatly among recipient small island developing States. Implementation of the Mauritius Strategy was financed primarily from domestic resources.

Figure IV
Average flows to the 29 members of the small island developing States sub-group of official development assistance, foreign direct investment (net inflows) and worker remittances, 1995-2008

Figure V
Official development assistance received vs. economic vulnerability index, 2007



39. The differences in the official development assistance flows received by small island developing States are enormous (see table 4). Official development assistance is not directed systematically to the lowest-income small island developing States or to those with the highest vulnerabilities (see figure V). It should also be noted that almost all of the recent increase in official development assistance was received by

Papua New Guinea, Saint Vincent and the Grenadines, Solomon Islands and Timor-Leste. In fact, in 12 of the 29 members of the small island developing States subgroup, official development assistance has declined since 2005. Emigration rates continue to be very high in many small island developing States (for example, 35 per cent in Samoa, 34 per cent in Tonga and 17 per cent in Fiji). Consequently, workers' remittances have been as high as 23 per cent of GDP in Samoa and 39 per cent in Tonga. However, they have been as low as 0.3 per cent in Maldives and 0.2 per cent in Papua New Guinea (see table 4). The relative size of net inflows of foreign direct investment has been much larger in the Caribbean small island developing States than in other such States. There are enormous differences in the amounts received by countries. Net inflows of foreign direct investment range from 0.5 per cent of GDP in Samoa to almost 34 per cent in Antigua and Barbuda (see table 4). Large inflows of foreign direct investment in the areas of tourism, minerals and communications services in the Caribbean small island developing States have helped to bridge the gap in the current account deficit, which has averaged about 14 per cent in the Caribbean in the past five years. Large foreign direct investment inflows in the Caribbean small island developing States combined with public investment have led to high investment levels — roughly 28 per cent in the 2000s — which have not, however, resulted in high growth rates.

Table 4

Official development assistance received, net inflows of foreign direct investment and workers' remittances

	Financial flows (percentage of GDP)		
	Remittances	FDI	ODA
Antigua and Barbuda	2.1	33.9	0.4
Bahamas	..	10.9	0
Cape Verde	8.0	9.0	11.8
Comoros	2.3	0.2	..
Dominica	8.2	13.6	6.3
Fiji	5.0	8.0	1.7
Grenada	10.0	22.9	4.5
Jamaica	14.7	6.6	0.26
Kiribati	6.9	..	20.6
Maldives	0.2	1.4	3.8
Marshall Islands	..	..	1.2
Mauritius	2.5	5.0	41.9
Palau	..	..	13.4
Papua New Guinea	0.2	1.5	5.7
Samoa	25.8	0.5	7.9
Sao Tome and Principe	1.1	26.4	25.0
Seychelles	1.4	27.3	0.4
Solomon Islands	3.2	8.0	67.3
Saint Kitts and Nevis	6.9	27.9	0.6
Saint Lucia	3.1	27.3	2.6
Saint Vincent and the Grenadines	9.1	16.5	12.7
Timor-Leste	..	..	16.3
Tonga	37.7	10.8	13.1
Trinidad and Tobago	0.5	..	0.1
Vanuatu	1.2	6.7	13.5

Source: World Bank, 2010.

Abbreviations: FDI, foreign direct investment; ODA, official development assistance.

40. Increasing debt burdens have been cause for concern in a number of small island developing States, especially in the Caribbean. In 2007, the average level of external debt stocks of the small island developing States subgroup was about 60 per cent. External debt stocks were in the range of 100 to [illegible]0 per cent of GDP in the one third of the States of the subgroup for which data was available, and there is evidence that debt stocks have worsened since 2008. Public debt levels are also very high — above 100 per cent of GDP in several cases. In contrast to least developed countries and certain other groups of countries, small island developing States that are not least developed countries have not qualified for debt-relief assistance and are increasingly considered ineligible for development aid. Under the Caribbean Single Market and Economy, the Caribbean small island developing States have a target of achieving a public-debt-to-GDP ratio of below 60 per cent by 2020. A regional development fund of $250 million was created in 2008 to promote business development in disadvantaged Caribbean small island developing States. The lack of capacity and the small size of projects have limited the potential for public-private partnerships and constrained access by small island developing States to available international financing mechanisms such as the Global Environment Facility and the Clean Development Mechanism.

Tourism (theme 4)

41. Tourism has contributed significantly to the development of many small island developing States and will continue to be very important to their future growth. On average, tourism receipts accounted for 31 per cent of the total value of the exports of the small island developing States subgroup in 2007, up from 42 per cent in 2000. This compares with less than 10 per cent in other developing countries. In 2007, the share of tourism receipts was larger than 50 per cent of exports in Antigua and Barbuda, the Bahamas, Cape Verde, Dominica, Grenada, Maldives, Samoa, Saint Kitts and Nevis, Saint Lucia, Saint Vincent and the Grenadines and Vanuatu (see table 5). In Maldives, the tourism sector accounts for about 72 per cent of GDP. The tourism sector in the Pacific small island developing States has grown by 30 per cent in the last five years.

42. Dependence on tourism is a significant source of economic vulnerability for small island developing States, in particular in view of the high volatility of tourism revenue growth. In recent years, the coefficient of variation of tourism revenue growth has been 1.6 for small island developing States, compared with 0.7 for least developed countries. The key reasons for such high volatility include the financial crisis, volatile oil prices, negative travel advisories, perceived health risks and dependence on a limited number of major source markets. For example, Europeans account for more than 70 per cent of the tourists who visit Maldives.

Table 1

International tourism receipts in selected small island developing States, share of total exports, 2007

	International tourism receipts (percentage of exports)
Cape Verde	54
Samoa	52
Maldives	49
Saint Lucia	46
Vanuatu	45
Barbados	43
Antigua and Barbuda	42
Grenada	36
Saint Vincent and the Grenadines	31
Dominica	31
Saint Kitts and Nevis	28
Jamaica	28
Seychelles	27
Mauritius	17
Tonga	16
Sao Tome and Principe	11
Trinidad and Tobago	3

17. The sustainable tourism plans and policies of small island developing States have aimed at increasing resilience and adding economic value, as well as addressing the often inequitable distribution of tourism's benefits. National tourism policies, strategies, plans or targets have recently been developed by, inter alia, Barbados, Kiribati, Mauritius, Maldives, the Marshall Islands, Palau, Sao Tome and Principe, Seychelles and Tuvalu. Small island developing States have continued to improve their tourism marketing and investment promotion. Fiji and Mauritius have developed national branding strategies and campaigns. However, modifications in the areas of transport and infrastructure continue to be major constraints to sustainable tourism development.

18. The attractions of ecotourism, cruise tourism, events tourism, diving tourism, pro-poor tourism, medical tourism and spa tourism have been on the agenda of many small island developing States, but actual development in these areas has been generally limited. The Pacific small island developing States developed a regional cruise strategy in 2005, and the Caribbean was also exploring these options. Ecotourism is being promoted in various forms, as in Cuba, Fiji, Sao Tome and Principe, Seychelles and Tuvalu, among others.

19. National sustainable tourism plans and strategies are even more important in small island developing States than in other countries, as the development beyond their carrying capacity may be irreversible or that could damage their environmental assets, leading to a collapse in tourism. Indeed, plans can guide a wide range of marketing and investment promotion activities. In view of the relatively low

[redacted]

[redacted] operation of small island developing States, the successful model holds special promise for them. The development of an accessible [redacted] knowledge base on the contribution of the various kinds of tourism might be considered.

Energy [redacted]:

(a) Most small island developing States are highly dependent on imported oil and other fossil fuels for transport and electricity generation. This is a particularly serious issue in view of the extensive use of diesel in power generation as a result of the small size and remoteness of many islands, which leaves those States highly exposed to oil-price volatility. A [redacted] worsening of prices have often translated immediately into social instability. In addition, the energy infrastructures of small island developing States have been highly vulnerable to natural disasters. Several such States have made efforts to ensure that their power plants and grids are [redacted] more resilient.

(b) Oil imports account for an average of [redacted] per cent of the imports of small island developing States. For example, Fiji's oil import bill tripled from 2000 to 2008 in absolute terms and accounted for one third of the import bill in 2009. The average oil import bill in Pacific small island developing States is about 10 per cent of GDP. The recent high volatility and high world crude-oil prices have had severe impacts on the balance of payments. An increase in the world crude-oil price of $10 per barrel results directly in a decrease of 1.7 per cent of GDP in Pacific small island developing States. In 2005, four Pacific of those States signed the Bulk Procurement of Petroleum Initiative, with a view to improving their market position. The remoteness of the Pacific means that retail gasoline prices there are among the highest in the developing world.[1] In order to buffer the social impacts of oil-price volatility, the Governments of small island developing States have typically maintained a policy of setting the local retail prices of fuels.

(c) Energy plans and policies have aimed to address the special vulnerabilities of small island developing States while ensuring a supply of secure, reliable, affordable and environmentally friendly energy and power for all islanders. While energy data availability is a serious issue for many small island developing States, it is evident from illustrative national data that only those with hydropower potential have high shares of renewable energy. The energy mix of Sao Tome and Principe is typical. Diesel for power generation accounts for 39 per cent, traditional firewood [redacted] per cent (among deforestation), hydroelectricity 1 per cent and natural gas less than 0.01 per cent. On the other hand, in Fiji, the electricity mix consists of 33 per cent fossil fuel, 62 per cent hydroelectric, 4 per cent biomass and 0.4 per cent wind power and other renewable resources.

(d) In the Caribbean, [redacted], Organization of Eastern Caribbean States and the Caribbean Association of Electric Utilities drafted regional energy policies in [redacted]. In the Pacific, a meeting of Ministers of Energy to be held in 2010 will endorse the Pacific Islands Energy Policy. National energy plans, policies or action plans [redacted] cover or at least [redacted] small island developing States. Recent examples include the Bahamas ([redacted]), Bahrain ([redacted]), Fiji ([redacted]), Jamaica ([redacted]), Grenada ([redacted]), Maldives ([redacted]), Mauritius ([redacted]) and Saint Vincent and the Grenadines ([redacted]). Drafts are in development or under consideration in

[1] [redacted]

[redacted]

Barbados, Jamaica, Grenada, the Marshall Islands, Palau, Saint Lucia and Seychelles. Integrated assessment tools have been increasingly used to take into account trade-offs between climate, land-use, energy and water strategies.*

96. Electrification in rural areas and especially in the outer islands has remained limited owing to the very high capital costs involved. Yet many small island developing States have made special efforts in that regard. For example, Fiji completed about 300 rural electrification community projects between 2005 and 2009, with the aim of providing universal access to electricity by 2016.

97. Most small island developing States have adopted strategies for the promotion of renewable energy that involve solar, wind, ocean thermal, wave, geothermal, biomass and hydroelectric power. For example, Maldives has announced its commitment to achieve a carbon-neutral energy sector by 2020 and to halve greenhouse gas emissions by 2015 through the use of renewable energy and energy-efficiency measures. Tuvalu has announced its aim of achieving 100 per cent renewable energy by 2020. Despite the focus of energy plans and many activities on renewable energy, little progress has been made in replacing fossil fuels and moving towards low-carbon energy sources. Fossil-fuel use has continued to increase faster than renewable-energy use in most small island developing States. To be economically viable, alternatives to fossil-fuelled power generation in such States continue to require subsidies, except for niche applications. The renewable energy potential of small island developing States varies greatly. The scarcity of land resources limits solar-panel development given the low energy density of solar radiation. Activities in such States have focused mainly on wind and solar power, as well as hydroelectricity, where feasible. There have been positive experiences with thermal solar water heating (in Barbados, Mauritius and Palau). Hybrid solar-diesel power generation is being piloted in Maldives and Tuvalu. Geothermal energy is expected to have considerable potential in small island developing States, but it is only in the early phases of exploration (in Saint Kitts and Nevis and Saint Lucia). Waste-to-energy systems have great potential but have been underused.

98. The international community has supported many energy-efficiency projects in small island developing States. Typical Government initiatives involve the conversion from incandescent to fluorescent lamps (Grenada, Mauritius and Saint Lucia), metering (Grenada), transport fuel efficiency (Tuvalu), customs duty concessions (Saint Lucia) and overall programmes (Cuba, Maldives and Palau).

99. Comprehensive energy plans need to be consistent with the measures taken in other sectors, which requires an integrated assessment of cross-sectoral trade-offs to complement the analysis of energy systems. Modern renewable energy can help reduce the vulnerability of small island developing States to oil-price volatility, but its use requires significant support measures and subsidies, such as preferential feed-in tariffs, duty-free concessions, bilateral donor financing and international financing instruments such as the Clean Development Mechanism and the Global Environment Facility. The renewable-energy options with the greatest future potential for small island developing States may well be different from those for other developing countries. Geothermal energy, deep-sea water for air-conditioning, waste-to-energy and solar thermal deserve more attention. Regional bulk petroleum

* A joint application of a climate, land-use, energy and water strategy model for Mauritius was presented at a side event at the seventeenth session of the Commission on Sustainable Development in 2009; see www.iaea.org/OurWork/ST/NE/Pess/csd-17.html.

procurement initiatives such as those in the Pacific deserve upscaling and implementation in other regions. There is no doubt that data-collection and monitoring systems are extremely underdeveloped, as is education on the assessment of energy technology choices.

Science and technology (theme 11, means 2)

54. Despite the relatively good education levels in small island developing States, investment in science and technology has been very limited, primarily as a result of their small size. Such underinvestment in most technology-intensive sectors is directly associated with the decline of traditional sectors and has hampered efforts to diversify into new, high-value-added sectors.

55. Investment in research and development in the Caribbean small island developing States is fairly minimal and accounts for an average of 0.13 per cent of GDP, leading to the extremely limited domestic development of technologies. According to a 2007 ECLAC report, specialization in science and technology subjects in the region's tertiary education institutions had declined owing to a lack of interest in science-related subjects at the secondary education level, insufficient research and development facilities, market forces and relatively low pay for engineers and scientists, general awareness issues, and the lack of national science and technology policies or strategies. Progress in science and technology, where it occurred, relied on technology imports, including in the growth sector of environmentally friendly technologies. Progress has been rather limited in most small island developing States in terms of the protection of intellectual property. While some countries, including Barbados, Jamaica and Trinidad and Tobago, have comprehensive legislative frameworks for copyright, the patent provisions are insufficient or non-existent in most small island developing States.

56. The United Nations Educational, Scientific and Cultural Organization (UNESCO) continued to promote science and technology in the small island developing States. A number of its recent initiatives are noteworthy, including Cariscience, the regional policy framework for science, technology and innovation in the Caribbean, and the Caribbean Council for Science and Technology. One noteworthy example of a small island developing States stepping up efforts to promote science and technology is that of Mauritius. In view of the fact that national research and development account for a mere 0.36 per cent of GDP, Mauritius has created a Ministry of Industry, Science and Research, introduced a new approach to the teaching of science in secondary education, and provided support to the Mauritius Sugar Industry Research Institute and the Mauritius Oceanography Institute.

57. Yet the area of science and technology remain severely underdeveloped in most small island developing States. The development of national and regional science and technology policies and strategies can be beneficial to the process of focusing on the scarce resources available and, promoting investment and a culture of innovation.

Graduation from least-developed-country status (theme 12)

58. In March 2010, there were 49 least developed countries in the world, 11 of which were small island developing States: Comoros, Guinea-Bissau, Haiti, Kiribati, Maldives, Samoa, Sao Tome and Principe, Solomon Islands, Timor-Leste,

Tuvalu and Vanuatu. The Committee for Development Policy, a subsidiary body of the Economic and Social Council, regularly reviews the status of least developed countries. In its latest triennial review of the list of least developed countries, in 2009, the Committee used the following three criteria for the identification of least developed countries: (a) a three-year average estimate of the gross national income (GNI) per capita (under $905 for inclusion, above $1,086 for graduation); (b) the human assets index, which takes into account indicators in the areas of nutrition (percentage of the population undernourished), health (mortality rate for children aged five years or under), education (the gross secondary school enrolment ratio) and the adult literacy rate; (c) the Committee's Economic Vulnerability Index, which takes into account indicators of population size, remoteness, merchandise export concentration, the share of agriculture, forestry and fisheries in the gross domestic product, homelessness due to natural disasters, instability of agricultural production and instability of exports of goods and services. To be added to the list, a country must satisfy all three criteria and its population must not exceed 75 million. To become eligible for graduation, a country must reach threshold levels for graduation for at least two of the aforementioned three criteria, or its gross national income per capita must exceed at least twice the threshold level, and the likelihood that the level of GNI per capita is sustainable must be deemed high.

59. Timor-Leste was added to the list in 2003, and Cape Verde graduated in December 2007. At the 2009 triennial review of the list of least developed countries, the Committee for Development Policy recommended that Equatorial Guinea be graduated. Tuvalu and Vanuatu were considered eligible but not recommended for graduation owing to doubts about the sustainability of their progress. Kiribati, which had met the criteria for the first time in the 2006 review, was found to be no longer eligible. Samoa and Maldives are scheduled for graduation in December 2010 and January 2011, respectively. Thus almost all recent graduations or recommendations for graduation from least-developed-country status involved small island developing States, which has led to concerns on their part that the Committee's economic vulnerability criteria might not fully reflect their specific characteristics, calling for a more in-depth analysis of the vulnerability of small island developing States that takes account of all its sustainable development dimensions.

B. Environment

Climate change (theme 1)

60. The small island developing States are especially vulnerable to climate change. Climate variability and change, sea-level rise and climate extremes such as increased frequency and intensity of storm events and droughts have adverse consequences for many of those States. Economic impacts include the loss of agricultural land and infrastructure, and negative impacts on fisheries. Environmental impacts include loss of biodiversity, saltwater intrusion and the degradation of terrestrial and wetland habitats. Social impacts include the destruction of human settlements, the loss of livelihoods and negative impacts on health and access to fresh water. Consequently, climate change is arguably one of the greatest concerns of small island developing States and climate-change adaptation measures and the mitigation of greenhouse-gas emissions are high on their agenda.

61. Sea-level rise is an existential threat to low-lying atoll islands. The Security Council discussed climate change and its security implications for the first time in 2009.[10] The very physical survival of Kiribati, Maldives, the Marshall Islands and Tuvalu is at stake, as is that of significant portions of land in other small island developing States that lie only a few feet above the sea.

62. Most small island developing States have ratified the Kyoto Protocol, but only 38 per cent of Caribbean small island developing States agreed that accession had improved their access to low-carbon technologies, according to an ECLAC survey carried out early in 2010. According to the United Nations Environment Programme (UNEP) Risoe Clean Development Mechanism database, as of March 2010 only 8 of 38 small island developing States had validated a Clean Development Mechanism project. Only 20 of 5,009 Clean Development Mechanism projects had been validated in small island developing States and only 5 of these had been carried out in 4 smaller, lower-income States (Cape Verde, Fiji, Jamaica and Papua New Guinea), accounting for only 0.14 per cent of the total number of certified emissions reduction validated until 2010.

63. Small island developing States, like other countries, face serious problems in terms of reducing carbon dioxide (CO_2) emissions, even though actions to that end are high on the political agenda. From 2000 to 2006, CO_2 emissions of the small island developing States subgroup increased at an average annual rate of 4.3 per cent, or from 1.9 to 2.5 metric tons of CO_2. In fact, CO_2 emissions have increased in all countries members of the small island developing States subgroup since 2000. Per capita, CO_2 emissions were higher than the world average in 6 of the 26 members of the subgroup for which data was available, but emissions ranged from as low as 0.16 tons of CO_2 per capita, in Timor-Leste to as high as 25 tons of CO_2, in Trinidad and Tobago, in 2006. From 1990 to 2005, CO_2 intensity increased in 15 of the 29 members of the subgroup for which data was available. In comparison, CO_2 intensity for East Asia decreased at a faster rate than in all small island developing States.

64. Small island developing States have made major efforts to carry out climate-change adaptation measures, but progress thus far has seemed to focus on public awareness, research and policy development rather than on implementation. National adaptation programmes of action were developed for several least developed countries among the small island developing States (under the GEF Least Developed Countries Fund), including for Kiribati, Samoa, Sao Tome and Principe, Tuvalu and Vanuatu. Multi-sector adaptation studies were also carried out in Mauritius and Saint Lucia, and projects in Fiji, Kiribati, Tonga and Vanuatu showcased cost-effective adaptation measures, supported by the South Pacific Regional Environment Programme and Secretariat of the Pacific Community-German Agency for Technical Cooperation projects. The International Climate Change Adaptation Initiative and the CARICOM Climate Change Centre have provided assistance in capacity-building. Support from the international community to help implement the adaptation measures proposed in the national adaptation programme of action has been limited, and small island developing States with higher incomes have found it particularly difficult to tap into international funds to co-finance adaptation measures.

[10] See also General Assembly resolution 63/281.

65. The wide range of impacts associated with climate change pose a challenge in terms of policy and planning. Examples of policy changes include the integration by Tuvalu of climate change and sea-level-related issues into its national sustainable development strategy, and the policy framework of Bahrain. Legislative changes were made in Kiribati, but the majority of small island developing States did not pass climate-change-specific legislation. Research in support of policy and decision-making has been promoted in Mauritius.

66. The lack of data and information on and awareness of climate change continue to constrain progress, especially in terms of local adaptation measures in rural and outer islands. The United Nations Framework Convention on Climate Change national communications process has helped in the collection of basic climate change data. Educational and awareness-raising activities were reported by Grenada, Saint Lucia and Tuvalu.

67. It is clear that small island developing States will need climate-change policies that cover all economic sectors, guide responses to environmental disasters and poverty issues, and also address more extreme options, including possible relocation from islands whose very existence is threatened. Good practices in the area of adaptation need to be shared effectively. Large funding gap for adaptation projects is apparent in small island developing Sta. financial support from development partners will be required on a much larger s. than has been the case. Special recognition of small island developing States as a group in the Framework Convention on Climate Change and in the mechanisms that might arise from the Copenhagen Accord may be considered so as to avoid any further marginalization of small island developing States.

Natural and environmental disasters (theme 2)

68. The small island developing States are vulnerable to the damaging impacts of cyclones, storm surges, landslides, droughts, floods, volcanic eruptions, earthquakes, and oil and chemical spills. Natural disasters in many small island developing States have permanently wiped out the development achievements of years, even decades. Samoa, Saint Lucia, Grenada, Vanuatu, Tonga and Maldives led the list of countries with the highest economic losses on capital stock in relative terms due to natural disasters for the period from 1970 to 2006.[11] Climate change has increased the frequency and intensity of cyclones, droughts and floods. The World Bank has estimated that the potential damage to small island developing States in the absence of adaptation measures would be extensive (e.g., 17 to 18 per cent of the Kiribati GDP for 2002).[12] Disaster risk reduction measures are a good investment in the future that can lead to economic savings and help avert hardship.

69. Resources dedicated to actions continue to flow primarily to post-disaster activities (disaster management) rather than towards heading off disasters in the first place (disaster risk reduction). However, some small island developing States have shifted to a more comprehensive approach that is an integral part of national

[11] Baritto, F., 2008, "Disasters, Vulnerability and Resilience from a Macroeconomic Perspective: Lessons from the Empirical Evidence", background paper for the 2009 International Strategy for Disaster Reduction, Global Assessment Report on Disaster Risk Reduction, November 2008.

[12] World Bank report, 2006: "Not if but when: adapting to natural hazards in the Pacific Islands region".

development planning, in line with the recommendations of the United Nations International Strategy for Disaster Reduction.

70. Exposure remains high, with settlement patterns typically concentrated in low-lying coastal areas and land-use planning insufficiently enforced. National emergency management plans, action plans or offices were recently created or updated in many islands in, inter alia, the Cook Islands, Saint Lucia, the Marshall Islands, Sao Tome and Principe, Tuvalu and Vanuatu. National action plans are being developed in Fiji, Micronesia (Federated States of), Palau, Samoa and Tonga. Local-level disaster management plans were reported by Grenada. Recent international efforts have included the Pacific Disaster Risk Management Partnership Network, the Pacific Humanitarian Team, the Disaster Risk Reduction and Disaster Management Framework for Action, and the Pacific Disaster Net database. However, on-the-ground progress has been mostly slow owing to an insufficiency of funds.

71. Natural disasters in small island developing States typically do not spare any sectors, leaving no safety net after a disaster strikes. Consequently, most have relied on donations and foreign loans for reconstruction following natural disasters, which has led in some cases to unsustainable debt levels. The Caribbean Catastrophe Risk Insurance Facility was established in 2008. While the facility can serve as a useful model for other regions, the level of the recent disbursement to Haiti ($7 million in early 2010) illustrates the need for much greater financial resources. Similar mechanisms have been created at the national level; for example, the National Disaster Relief and Rehabilitation Fund of Fiji was established in 2004.

Sustainable production and consumption (theme 15)

72. Sustainable consumption and production is a broad concept that provides a useful perspective on the sustainability of development progress. The otherwise successful sustainable consumption and production projects and initiatives undertaken in small island developing States have rarely made a real difference at the national level, as evidenced by the eco-efficiency measures applied to the economies of small island developing States. One popular measure is that of the ecological deficit/surplus of countries,[13] which refers to the difference between a country's ecological footprint (a measure of how much productive land and water is required to produce all the resources consumed and to absorb all the waste generated per year using prevailing technology) and its biocapacity (the total biological production capacity per year of a given area). The ESCAP *State of the Environment in Asia and the Pacific* report has noted the ecological deficits and surpluses of the countries in that region. While the measure is available only for a few small island developing States and related territories, the results, where available, are not encouraging. On the basis of the 2009 national footprint accounts, Cuba, the Dominican Republic, Fiji and Haiti reported significant ecological deficits, in contrast to the typical surpluses of larger developing countries with similar incomes. Guinea-Bissau, Papua New Guinea and Solomon Islands showed small surpluses. In most small island developing States, the balance has continually worsened in recent years, as biocapacity has continued to decrease and the ecological footprint has typically increased or decreased only slightly (e.g., Guinea-

[13] www.footprintnetwork.org.

Bissau). Decreasing footprints were typically caused by economic decline rather than by successful eco-efficiency measures.

73. The Marrakech Process supports the elaboration of a 10-year framework of programmes on sustainable consumption and production, as called for by the Johannesburg Plan of Implementation of the World Summit on Sustainable Development. Examples of activities include, inter alia, United Nations Industrial Development Organization-UNEP national cleaner production centres, centres in Cuba and Mauritius, CARICOM initiatives, activities of the tourism task force, and GEF projects in Fiji and Maldives.

74. Some Caribbean small island developing States have embraced a major policy shift towards transforming into green economies. Dominica has adopted the concept of an environmentally sound organic island, Guyana a low-carbon development strategy, and Barbados the green economy concept. Examples of national sustainable consumption and production strategies or the inclusion of such elements into national development strategies were reported by Barbados, Cuba, Dominica and Jamaica. Only few Pacific small island developing States have developed such national strategies, but 11 of them, along with other ESCAP members, adopted the green-growth approach in 2005.

75. While many good sustainable consumption and production projects and initiatives have been undertaken in small island developing States, overall progress has been much slower than had been expected by policymakers there. This is due in part to the continuing misalignment between overall policies and actual projects, as there is a lack of capacity and resources, and simple product affordability issues for low-income groups. It is more difficult in small island developing States than in other developing countries to compromise on direct cost issues, since overall per capita costs are already considerably higher owing to their small size and remoteness. The green-growth approach recently adopted by Pacific small island developing States may be a useful integrated approach for all such States to reinforce both economic growth and sustainability.

Waste management (theme 3)

76. The small island developing States are vulnerable to waste-management challenges in terms of both land- and sea-based sources of pollution. Waste management systems in those islands, as in other developing countries, have come under pressure owing to increasing population, urbanization, changing consumption patterns, trade and seasonal tourism. The volume of domestic wastewater and solid waste has increased rapidly, as has the share of non-degradable and toxic materials. Municipal solid waste volumes are estimated to have doubled in the Pacific small island developing States in recent years. In contrast to developed countries, typically more than half of the waste in small island developing States is organic. That underlines the importance of composting, designer fertilizer and biogasification, in contrast to incineration. Good practices in "pro-poor and sustainable solid waste management" in smaller Asian cities have been piloted by ESCAP and provide useful examples for small island developing States.[14]

77. The small island developing States face particular problems in view of their low environmental and socio-economic carrying capacities. Current waste-

[14] www.unescap.org/esd/sudu/swm/.

management practices have resulted in the degradation of coral reefs, seagrass beds, mangroves and coastal zones, as well as in health warnings about diseases and contaminated food supplies. Such developments threaten tourism, fisheries, and even food security. Even if the more dramatic impacts can be averted, the current economic costs of solid waste are already very large in small island developing States (e.g., 1.6 per cent of GDP in Palau).[15]

78. Yet significant progress can also be reported from many small island developing States in terms of improving waste management. For example, waste-collection coverage in major cities in the Caribbean reached between 60 to 90 per cent of the population, with the exception of Haiti, where the rate was much lower. Some progress has been made with regard to sanitary landfills. Many small island developing States have already achieved the Millennium Development Goal target related to universal access to improved sanitation. According to the World Bank, all Caribbean small island developing States but one had achieved at least 80 per cent access to sanitation, with most beyond 90 per cent. However, high incidences of eutrophication due to the dumping of sewage into rivers and coastal waters are also reported. While the high costs of the construction and maintenance of modern sewage-treatment plants are an important constraint, it should be noted that cheaper biological treatment methods exist that are especially suited to tropical climates. Jamaica, Maldives, Mauritius, Saint Lucia, Seychelles and Saint Vincent and the Grenadines have developed national solid-waste-management policies, acts or programmes. Seychelles made advances in systematic composting and waste recycling. Waste recycling on a commercial scale exists in Mauritius, where plastics are recycled and bagasse is being used as a source of energy.

79. The special characteristics of small island developing States also limit the transferability of good practices from other developing countries. The economic viability of recycling efforts is constrained by the relatively small quantities of wastes and high energy and transport costs. Where land is sparse, incineration is often chosen, which has turned out to be unsustainable in terms of pollution and high costs.

80. Small island developing States are increasingly vulnerable to the transboundary movement of hazardous wastes and chemicals originating from land-based and ship-borne sources. In particular, the large amounts of plastics in the oceans and ship waste are matters of concern and have had destructive impacts on the marine ecosystems of small island developing States. The Basel Convention is aimed at addressing the threats posed by the transboundary movement of hazardous wastes, including their disposal in small island developing States.

Coastal and marine resources (theme 4)

81. The majority of the inhabitants of small island developing States live in or near coastal areas (e.g., 80 per cent of Pacific islanders), and many rely on the coral reef for their livelihood. Nutrition, welfare, culture, recreation, government revenue and employment in small island developing States are based on fish stocks. For example, tuna fishery is by far the most valuable fishing activity in the Pacific region, contributing more than 10 per cent of GDP and over 50 per cent of exports in some Pacific small island developing States.

[15] South Pacific Regional Environment Programme, 2005.

82. Small island developing States have established national vessel-monitoring systems (Nauru) and introduced national plans and policies (Mauritius, Seychelles), and are developing aquaculture to promote food security (Palau). In 2008, the Western and Central Pacific Fisheries Commission adopted measures that included cuts in long-line fishing and periods of closure to fishing. Continuing challenges include developing sustainable coastal fisheries, rights-based fisheries management, strengthening national tuna industries, improving surveillance, improving compliance with sanitary measures, and addressing the proliferation of illegal fishing.

83. The maritime boundary definition is still pending for many small island developing States. Thirteen islands[16] successfully lodged their submissions to the Commission on the Limits of the Continental Shelf for additional seabed territory. Seabed mineral exploration continues in the exclusive economic zones of Papua New Guinea and Tonga, which highlights the importance of improved legal frameworks for sustainable seabed mining.

84. Monitoring, data collection and analysis of information on coastal and marine resource management for decision-making is an ongoing need articulated by small island developing States, in particular in relation to fish stocks, non-living and living seabed resources, and climate-change effects. To address the issue of coastal erosion, Maldives established survey units to collect long-term data on the evolution of the coastal zone. The Pacific Islands Ocean Observing System and the Caribbean Marine Protected Area Management Network and Forum consolidated and standardized information on the Pacific Ocean and marine protected areas, respectively. The Food and Agriculture Organization of the United Nations (FAO) provided support for global monitoring and analysis of fisheries.

85. More progress was made in the Pacific in terms of new marine protected areas than in the regions of the Caribbean or the Atlantic, Indian Ocean, Mediterranean and South China Seas. In 2008, Kiribati created the world's largest protected marine reserve, the Phoenix Islands Protected Area, encompassing one of the planet's last intact coral archipelagos, but sustained funding will be required to support surveillance. The South Pacific has experienced a remarkable proliferation of marine managed areas in the 2000s, implemented by over 500 communities spanning 15 independent countries. International conservation initiatives include the Coral Triangle Initiative, the Micronesia Challenge, the Caribbean Challenge and the Western Indian Ocean Challenge. Coastal-zone management plans have been developed by a number of small island developing States (Maldives, Saint Lucia) to address the issue of degradation.

Freshwater resources (theme 5)

86. Owing to their small size and their geological, topographical and climatic conditions, small island developing States face major constraints in terms of the quantity and quality of freshwater resources. This is particularly true of low-lying coral islands, where groundwater supplies are limited and protected only by a thin permeable soil.

[16] Barbados, the Cook Islands, Cuba, Fiji, Mauritius, Micronesia (Federated States of), Palau, Papua New Guinea and Seychelles, Solomon Islands, Suriname, Tonga and Trinidad and Tobago.

87. In the Pacific, the period 2006-2009 saw a number of significant initiatives in the region's water and sanitation sector, largely guided by the Pacific Plan, into which water, sanitation and hygiene challenges were incorporated in 2006. The Pacific Hydrological Cycle Observing System was established in 2007 to build the capacity and infrastructure of Pacific small island developing States.

88. Pacific islands that are primarily dependent on surface water (the Cook Islands, Fiji, Micronesia (Federated States of), Palau, Papua New Guinea, Samoa, Solomon Islands and Vanuatu) made progress in the installation of rain gauges and water resources assessments of major rivers. Those dependent on groundwater (Kiribati, Marshall Islands, Nauru, Niue, Tonga and Tuvalu) focused on monitoring and data quality, and those primarily harvesting rainwater (Tuvalu and Nauru) focused on optimizing its capture and storage.

89. Most Caribbean small island developing States have relatively high levels of access to drinking water and sanitation, with the notable exceptions of Haiti and Belize. Since 2006, there has been increased awareness of the need for water conservation in view of the drought conditions that are expected to prevail because of climate change in the southern Caribbean.

90. Small island developing States in the Atlantic, Indian Ocean, Mediterranean and South China Seas region face limitations on the quality and quantity of freshwater owing to variable rainfall, high runoff and inadequate storage facilities. In Seychelles, 98 per cent of rainfall is lost through runoff and evapotranspiration. In Cape Verde and Sao Tome, irregular rainfall causes periodic drought and famine. Chemical fertilizers, higher salt concentrations and human waste contributed to groundwater pollution. Desalination plants were introduced in Maldives and Seychelles.

91. Increased funds are needed for freshwater activities in most small island developing States. Public-awareness campaigns, education and community participation in watershed management may complement policy initiatives and technological improvements.

Land resources (theme 6)

92. The small size of most small island developing States, together with land tenure systems, limit the land area available for economic activities. Land use is rather diverse among those States, reflecting different geographical and settlement patterns. Some capital islands are fully covered by built-up areas, with no sizeable green spaces, whereas others include large land areas with a low population density. The share of forest area in total land area has averaged a stable 38 per cent since 1995. However, it varied widely among SIDS, from as low as 3 per cent in Kiribati, Comoros and Maldives to as high as 88 and 91 per cent in Palau and Micronesia (Federated States of), respectively. Since 2000, deforestation has been registered in 5 of the 27 members of the small island developing States subgroup for which data is available. Agriculture remains the single largest sector in a number of Pacific small island developing States, where it accounts for more than 85 per cent of foreign exchange, contributing substantially to total employment (40 to 80 per cent) and representing 20 to 40 per cent of GDP and over 50 per cent of exports. Artisanal and commercial mining is important in few small island developing States.

93. Population pressure on a limited resource base, deforestation, land degradation, erosion and unsustainable agricultural practices have increased the vulnerabilities of many small island developing States and led to intense competition among land-use options. Land-use planning efforts have been hampered in many such States by problems with enforcement and narrow legal systems. Soil erosion and the degradation of the already scarce land areas has been a typical consequence. However, progress has been made in terms of land conservation. The share of terrestrial areas protected to total surface area in the small island developing States subgroup increased from 1.0 to 1.3 per cent from 1995 to 2008, but limited surveillance and management capacity has been a continued source of concern in many small island developing States. Progress in sustainable land management is constrained mainly by capacity issues, a lack of funds and insufficient data.

Biodiversity (theme 9)

94. There is a wealth of studies and literature establishing the significant global value of species diversity and endemism in small island developing States, and also highlighting the fact that their small size and isolation and the fragility of their ecosystems increases the vulnerability of their biodiversity resources. Small island developing States are also home to a large number of indigenous family groups, who have retained robust cultures, more than 1,000 distinct languages and strong traditional attachments to the land and the sea. There is therefore a high social, cultural and economic dependence on the goods and services that biodiversity provides, such as food, water, shelter and medicine. While there has been much progress in the past decade in the management of biodiversity resources, there is also a continued loss of biodiversity owing to the introduction of invasive and alien species, deforestation, overexploitation, pollution, natural disasters, coral reef deterioration and habitat degradation and loss. These threats are exacerbated by the impacts of climate change.

95. Among the priority areas for action to ensure a sustainable supply of the ecosystem services and goods that biodiversity provides for in support of small island developing States communities are: concerted efforts to tackle invasive species; building the resilience of fragile ecosystems with respect to climate change through ecosystem-based adaptation and mitigation; improving data and information systems to assess the vulnerability and resilience of biodiversity; assessing the social and economic value of biodiversity; and supporting the inclusion of biodiversity in National Sustainable Development Strategy processes.

C. Social systems and institutions

96. Resilient social systems and institutions are important to address the vulnerabilities of small island developing States. Yet in many of them expenditures on and population coverage by social protection are among the lowest in the world. Per capita expenditure on social protection in Pacific small island developing States averaged $30, compared with more than $100 in South Asia and $600 in East Asia.

[illegible]

97. The public health issues in small island developing States are similar to those in other developing countries, but there are special challenges owing to the small size and remoteness of those States. Reliance on imported food items of limited nutritional value has contributed to vitamin and mineral deficiencies in many of them. A growing concern in small island developing States is the increasing prevalence of non-communicable diseases, in particular diabetes, obesity, hypertension, cardiovascular diseases and cancer. Nauru, Tonga and Mauritius are among the top 10 countries with the greatest prevalence of diabetes in the world. The prevalence of obesity in the Caribbean is among the highest in the world, and mortality from diabetes is approximately double that of North America.

98. The threat of HIV varies greatly among small island developing States. While the Caribbean region has the second-highest HIV prevalence rate in the world (with nine countries above 1 per cent), the Pacific small island developing States and those in the Atlantic, Indian Ocean, Mediterranean and South China Sea region have comparatively low HIV prevalence rates (with the exception of Papua New Guinea, where it is 2.5 per cent, as well as Guinea-Bissau and Mauritius, with rates over 1 per cent).

99. Vector-borne diseases, including malaria, chikungunya and dengue, continue to be serious public-health issues, resulting in significant morbidity and severe economic losses, including for tourism. Cholera is a cyclical epidemic in areas where sanitation and water-treatment facilities are inadequate. In the Pacific small island developing States, the annual incidence of diarrhoeal diseases nearly matches the number of its inhabitants (6.7 million acute cases). Diarrhoeal diseases are responsible for the deaths of 2,800 persons each year, most of them young children. Natural disasters create new breeding grounds for communicable diseases. Pacific small island developing States have developed cross-border and regional approaches to common health system challenges, including with respect to early warning and notification systems for disease outbreaks, the management of medicine supplies, and the need to provide specialist medical services. The Pacific remains polio-free and nearly all countries have embarked on measles elimination, with nearly 95 per cent immunization coverage rates. Several small island developing States actively participated in the worldwide campaign to roll back malaria.

100. In most small island developing States, infant mortality rates and life expectancy have improved over the past several decades, and more women have access to proper prenatal, intra-natal and post-natal care. However, improvements in some indicators have stalled in the 2000s, and concerns remain in some small island developing States. For example, the under-five mortality rate in Papua New Guinea has decreased only slowly and remains at 91 per 1,000 live births.

101. A persistent challenge for small island developing States is the limited capacity and skills and chronic shortage of health-care workers, which is partly due to emigration. Examples of capacity-building initiatives include the Pacific Open Learning Health Net, the provision by Cuba of medical education and health care in Caribbean small island developing States, and the three faculties of medicine and dentistry in Mauritius.

102. A unique window of opportunity has been noted at present for the establishment of sustainable welfare systems in the coming years, with the demand

from the younger generation declining and the need for support for older persons still relatively limited. National health expenditures continued to be relatively low in most small island developing States. Several Pacific ones have established health promotion foundations funded by taxes on alcohol and tobacco, Government contributions and other sources.

Culture (Rules 39)

151. The preservation and promotion of their cultural heritage is of particular importance to small island developing States owing to the contribution of cultural industries and initiatives to sustainable development, in terms of economic diversification in general and the tourism sector in particular, but also due to the increasing vulnerability of their cultural identities.

152. Several small island developing States have undertaken initiatives to protect traditional knowledge, GIS and cultural expressions. For example, Canada has included culture in their National Sustainable Development Strategy, and Dominica, Jamaica, Papua New Guinea and Saint Lucia have finalized national cultural policies. Examples of institutional actions have included the establishment of a Government department of culture in Tuvalu to develop a national dictionary, and the creation of a national heritage fund in Mauritius. National cultural foundations based on the Barbadian model were established in Saint Lucia and Grenada, and a Kava office was set up in Dominica.

153. Intellectual property management has been addressed through the Caribbean Copyright Link, an alliance of the author societies of Barbados, Jamaica, Saint Lucia and Trinidad and Tobago, with the principal aim of supporting the collection of royalties from international markets and to build intellectual property management capacity. Mauritius has also strengthened its anti-piracy unit.

154. Regional organizations in the Pacific and Caribbean have played a key role in advancing the cultural agenda. The secretariat of the Pacific Community works with small island developing States to raise the profile of culture and to collect cultural statistics. Since 2008, an action plan for the Pacific Regional Framework for the Protection of Traditional Knowledge and Expressions of Culture has provided legal protection to traditional knowledge and cultural expressions. The secretariat and the Council of Pacific Arts are developing a regional cultural strategy, and festivals have been used to showcase cultural products and contribute to greater awareness in that regard.

155. Almost all small island developing States had ratified the Convention Concerning the Protection of the World Cultural and Natural Heritage as of 2005, and five new sites in small island developing States have been added to the World Heritage list in the past five years. Twelve small island developing States had ratified the Convention for the Safeguarding of the Intangible Cultural Heritage, and 10 the Convention on the Protection and Promotion of the Diversity of Cultural Expressions.

156. Barbados, Jamaica and Mauritius have established national funds to provide grant support to the arts and culture, while the Bahamas rely on private-sector assistance. Palau has proposed a law that would set aside 1 per cent of the capital costs of public-sector construction projects for the promotion of the Palauan arts.

The efforts made in the Caribbean region to establish a regional fund for culture have not yet resulted in a sustainable pool of resources.

Capacity development and education (Review 14, means 3)

109. Capacity development and education face the combined challenges of brain drain and small populations size. Progress towards the achievement of the Millennium Development Goal target of universal primary education has been mixed in the small island developing States. General literacy is high in the Caribbean ones, except for Belize and Haiti, but remains a challenge in the Pacific and AIMS regions, with Comoros, Guinea-Bissau, Papua New Guinea, Timor-Leste and Vanuatu, being of greatest concern. Literacy rates among 15-to-24-year-olds range mostly between 64 and 100 per cent for the small island developing States subgroup. While education is compulsory for children aged 5 to 16 years in most small island developing States, some have lower requirements. Primary enrolment and completion rates have improved in most small island developing States, but completion rates declined in Fiji, Cape Verde, Papua New Guinea, Suriname and Vanuatu. In terms of gender parity at the primary and secondary levels, the high dropout rate among young boys was of concern, whereas girls were increasingly more successful and stayed in school longer in most small island developing States. Tertiary education enrolment and programme completion rates are also higher for women than men in most of these States.

110. Some small island developing States have made progress in the area of tertiary education in recent years. For example, Seychelles has established its own university, and in Mauritius in 2008 44 private institutions offered tertiary-level local programmes. Well-known universities include the University of Trinidad and Tobago, the University of the West Indies and the University of the South Pacific. The Department of Economic and Social Affairs and the University Consortium of Small Island States are undertaking a project to establish a common platform to run virtual training programmes in sustainable development. This initiative is part of a general revitalization of the Small Island Developing States Network as a knowledge-sharing platform.

111. Initiatives are under way to improve the limited information and communications technology access in education. The One Laptop per Child public-private partnerships initiative was implemented in Haiti, Nauru, Niue, Papua New Guinea, Solomon Islands and Vanuatu. The Pacific Regional Qualifications Register now includes national qualifications authorities in Fiji, Samoa, Tonga, and Vanuatu and is linked to New Zealand.

Knowledge management, monitoring and evaluation (Review 18, means 9)

112. The implementation of sustainable development strategies and the ability to monitor and evaluate progress is dependent on the effective dissemination of knowledge and information. Knowledge management powered by modern information and communications technology holds the promise of mitigating the effects of limited capacity, isolation and remoteness. However, Internet access, which is crucial for modern knowledge management, remains a constraint. In 2007, Internet penetration was higher than the critical level of 33 per cent only in 5 small island developing States and was below 10 per cent in 9 of the 23 members of the small island developing States subgroup for which data is available. Similarly,

international bandwidth at a reasonable cost is still rare in small island developing States.

113. Given the small size of small island developing States, the availability of good-quality data for decision-making is scarce compared with larger countries. The ability to monitor environmental change has improved significantly along with the ability to quantify rates of change at scales appropriate for small islands. Global data systems are now available for spatial and real-time data, including satellite and air photo imagery and remotely sensed data. Such systems are used in early-warning tools for climate variability and natural hazards. Examples of initiatives include the South Pacific Applied Geoscience Commission GeoNetwork, the Caribbean Marine Protected Area Management Network and the Pacific Regional Information System. E-governance initiatives were reported from Antigua and Barbuda, Dominica, Grenada, Maldives, Mauritius and Saint Kitts and Nevis. Mauritius has been a leader among small island developing States in terms of information and communications technology applications.

114. However, most of the new systems and knowledge-management processes require specialized expertise. Effective knowledge-sharing also faces cultural and social barriers, resistance to innovation and knowledge creation, and the multicultural and multilingual reality of many small island developing States.

National and regional governance (theme 16, means 4, 6 and 7)

115. Good governance is a key component of coping capacities and thus central to reducing the vulnerabilities of small island developing States. World Bank governance indices are based on the responses on quality of governance provided by a large number of enterprises, citizens and expert surveys in industrial and developing countries. According to the World Bank, on average for the SIDS subgroup, the "government effectiveness" index improved slightly, from -0.22 in 2004 to -0.14 in 2008, as did the "rule of law" index, which increased from 0.21 to 0.22. However, the average "political stability" index declined from 0.71 in 2004 to 0.57 in 2008. While the subgroup exhibits on average a relatively high level of political stability and government effectiveness, those averages mask large differences between countries.[17]

116. In the past five years, there have been many important advances, in terms of the development of regional institutions, especially in the Caribbean and the Pacific regions, which are detailed in the regional review reports on the five-year review of the implementation of the Mauritius Strategy. For example, the Pacific Plan adopted by Forum leaders effectively translates the Mauritius Strategy into a regional framework that has effectively guided national and regional policy and institutional developments.

117. The United Nations system has provided a wide range of support for the implementation of the Mauritius Strategy since its adoption in 2005. A recent internal review carried out by the Department of Economic and Social Affairs small island developing States Unit in early 2010 reviewed the extent of the effectiveness and the shortcomings of those efforts. The report, based on inputs from members of

[17] Kaufmann, D., Kraay, A., Mastruzzi, M. (2009), "Governance matters VIII: aggregate and individual governance indicators for 1996-2008", World Bank Policy Research Working Paper No. 4978, June 2009.

the Inter-agency Consultative Group on small island developing States, confirmed that a sizeable number of technical assistance projects had been implemented by United Nations entities, addressing all 19 thematic areas of the Mauritius Strategy. In fact, all 21 members of the Group had carried out implementation activities during the past five years. The Group comprises 14 United Nations system bodies, the Department of Economic and Social Affairs, subregional headquarters of ECLAC, the ESCAP Pacific Operations Centre, FAO, UNEP, the United Nations Industrial Development Organization, the Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States, the secretariat of the Convention on Biological Diversity, the Office for the Coordination of Humanitarian Affairs, UNDP, UNESCO, the United Nations Human Settlements Programme, the United Nations International Strategy for Disaster Reduction and WHO) and seven other intergovernmental and non-governmental organizations (CARICOM, the Commonwealth Secretariat, the Intergovernmental Oceanographic Commission, the Sea Level Rise Foundation, the Pacific Islands Forum secretariat, the World Conservation Union and the South Pacific Regional Environment Programme). The United Nations has dedicated increased resources and staff to small island developing States-related activities since 2005. However, resources arguably remain well below the expectations of such States and are below the level of the resources dedicated to United Nations support for other vulnerable groups of countries.

118. There is much room for improvement in terms of the coordination of the activities of United Nations and non-United Nations organizations in support of small island developing States. The existing coordination mechanism in the United Nations system, the Inter-agency Consultative Group, is an informal network that operates at the working level. Despite the growing interest in active participation in the Group, which doubled its membership in the latter half of 2009, coordination at the project level and in terms of monitoring and evaluation remains highly fragmented and ad hoc. There is a need for the establishment of a common database of projects in support of small island developing States and the lessons learned in that regard.

119. There is a relatively high awareness among United Nations and non-United Nations organizations of the importance of issues related to small island developing States, which has translated into a growing number of activities on the ground since 2005. However, the need to better coordinate, resource, and scale up such activities remains.

IV. Issues for consideration

120. The three regional meetings for the five-year review of the Mauritius Strategy provided regional outcome documents and regional review reports that were based on national assessment reports submitted by Member States. In general, substantial progress has been made in small island developing States in terms of implementation of the Strategy and progress towards the Millennium Development Goals, but renewed efforts are needed. The regional reports indicate that small island developing States continue to be highly vulnerable to external shocks, a conclusion supported by the analysis set out in the present report and by other international reports (see sections II.B and II.C). The regional reports also highlighted the fact that many of the hard-earned gains made are threatened by the

adverse impacts of climate change and natural disasters, and the recent food, fuel and financial global crises. Furthermore, anecdotal evidence suggests that those impacts have overstretched the already limited coping capacities of small island developing States to the point where they are lagging behind, thus increasing their exposure.

121. In the light of the progress made, the lessons learned and the constraints on implementation of the Mauritius Strategy highlighted in the present report and in the three regional review meetings, Member States may wish to consider concentrating on the following four areas, where focused actions are needed most to further address the vulnerabilities and support the sustainable development of small island developing States: (a) strengthening support for national sustainable development strategies and national development planning processes; (b) supporting initiatives towards sustainable energy development; (c) strengthening the resilience of fragile ecosystems to the impacts of climate change; and (d) supporting partnership initiatives for action in the further implementation of the Programme of Action.

122. First, the small island developing States acknowledge that sustainable development is primarily a national responsibility, in line with paragraph 3 of the Mauritius Strategy for Implementation. This emphasizes the importance of National Sustainable Development Strategies and national development processes for the sustainable development of small island developing States. The regional reviews highlighted the need to strengthen national data and information systems for decision-making and the development of vulnerability-resilience country profiles; strengthen the institutionalization of indicators and databases for sustainable development for monitoring and evaluation; support the mainstreaming of sector plans into National Sustainable Development Strategies; and streamline reporting requirements to reduce the burden on human resources, which are limited.

123. Secondly, sustainable energy is crucial to the sustainable development of small island developing States, as energy is the driver of growth in all sectors. Heavy reliance on imported fuels renders those States vulnerable to price spikes; indeed, the recent high world oil prices had a severe impact on the balance of payments of small island developing States. Focused efforts are therefore needed to reduce reliance on imported fuel through the accelerated utilization of alternative energy technologies; facilitate investment in modern energy technologies and systems; and guide such action through an energy systems analysis so as to ensure energy security in the long term.

124. Thirdly, the livelihoods of small island developing States communities are closely linked to their natural resource base and the ecosystem services that biodiversity provides, but they are on the front line in terms of the threats posed by climate change. Despite or because of such threats, small island developing States have demonstrated leadership in building ecosystem resilience to climate change through commitments to protected area networks and conservation. Support is needed to ensure sustainable financing for protected area networks and adopt pro-growth policies and ecosystem-based approaches to adaptation and mitigation.

125. Fourthly, the recent regional reviews all agreed that the focus in terms of the way forward needs to be on the implementation of initiatives that address the vulnerabilities of small island developing States and strengthen their coping capacities, with the support of the international community through partnerships. All regional meetings highlighted the need for strengthened cooperation and

partnerships and suggested that there was a need to build on existing mechanisms, with enhanced and coordinated roles for regional organizations and United Nations bodies. This calls for the strengthening of public-public and public-private partnerships, which could take the form of South-South cooperation, including among small island developing States, and the building of alliances with donor communities in a coordinated manner for effective delivery of assistance. In terms of building on existing mechanisms, the five-year review could consider improving the Commission on Sustainable Development partnerships mechanism, which has been in place since World Summit for Social Development in 2002, by reviewing and relaunching a revised set of partnership initiatives that provide a focus and an impetus for action aimed at addressing the vulnerabilities of small island developing States, building on the lessons learned since 2002.